



India Meteorological Department
FDP STORM Bulletin No.117 (30-06-2017)
(FINAL BULLETIN OF FDP STORM-2017)

1. CURRENT SYNOPTIC SITUATION at 0300UTC of the Day:

- ◆ The Northern Limit of Monsoon (NLM) continues to pass through Lat. 26.0 °N / Long. 70.0°E, Barmer, Chittorgarh, Guna, Satna, Siddhi, Patna and Lat.27.0°N / Long. 85.0°E.
- ◆ Favourable conditions are developing for the further advance of southwest monsoon into remaining parts of Bihar and some more parts of Madhya Pradesh, East Uttar Pradesh during next 48 hours and subsequently towards West Uttar Pradesh, National Capital Region (NCR) and some parts of Uttarakhand and Haryana during next 72 hours.
- ◆ The low pressure area over Saurashtra and neighbourhood, now lies over Kutch & neighbourhood and associated upper air cyclonic circulation extends upto 5.8 km above mean sea level.
- ◆ An upper air cyclonic circulation lies over northeast Rajasthan & neighbourhood and extends upto 2.1 km above mean sea level.
- ◆ A fresh western disturbance as an upper cyclonic circulation lies over northeast Afghanistan & adjoining north Pakistan between 3.1 & 5.8 km above mean sea level.
- ◆ An upper air cyclonic circulation lies over northwest & adjoining westcentral Bay of Bengal off south Odisha-north Andhra Pradesh coast between 1.5 & 3.1 km above mean sea level.
- ◆ The upper air cyclonic circulation over Jharkhand & adjoining Bihar, now lies over Bihar & adjoining Uttar Pradesh and extends upto 0.9 km above mean sea level.
- ◆ The trough at mean sea level from center of low pressure area over Saurashtra & neighbourhood to westcentral Bay of Bengal now runs from center of low pressure area over Kutch & neighbourhood to east Assam across south Uttar Pradesh, Bihar and extends upto 0.9 km above mean sea level.
- ◆ The feeble off-shore trough at mean sea level from south Gujarat coast to Kerala coast persists.
- ◆ The upper air cyclonic circulation over northwest Bay of Bengal & adjoining coastal areas of West Bengal, now lies over Jharkhand & adjoining Gangetic West Bengal between 1.5 & 3.1 km above mean sea level.
- ◆ The western disturbance as a trough in mid-tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 71.0°E and north of Lat. 30.0°N has moved away east-northeastwards.

SATELLITE OBSERVATIONS during past 24hrs and current observation:**Current Observation (based on 0900UTC imagery of INSAT 3D):****Convective Activity:**

Cell No	Date/time (UTC)	Location/Area	MIN CTT (-DEG C)	Movement	Remarks
1	30/0400	E Haryana	73		Developing
	0500	E Haryana, Delhi adjoining Uttar Pradesh	79		
	0600	do	80		
	0700	do	82		
	0800	S Punjab, Haryana, Delhi, NW Uttar Pradesh.	92		
	0900	do	92		
2	30/0800	SW Uttar Pradesh adjoining NW Uttar Pradesh.	82		Developing
	0900	do	84		
3	30/0800	W Rajasthan	83		Developing
	0900	do	85		

Low Level Circulation (LLC):

Broken low/med clouds with embedded intense to very intense convection were seen over NE Arabian Sea & N/Hood in association with LLC over the area.

Westerly Trough:

Trough in westerlies runs roughly along long 71.0°E north of lat 30.0°N.

Cloud Description:

Broken low/medium clouds with embedded intense to very intense convection were seen over N Chhattisgarh and S Jharkhand. Scattered low/medium clouds with embedded intense to very intense convection were seen over S Punjab, Haryana, Delhi, Uttar Pradesh (minimum CTT minus 92deg C). Broken low/medium clouds with embedded moderate to intense convection were seen over Gujarat, W Rajasthan and Madhya Pradesh. Scattered low/medium clouds with embedded moderate to intense convection were seen over S Chhattisgarh, Odisha, N Jharkhand, Bihar, Gangetic West Bengal, N Assam, Arunachal Pradesh & Bangladesh, South Interior Karnataka, coastal Andhra Pradesh and Rayalaseema. Scattered low/medium clouds with embedded weak to moderate convection were seen over J & K, Himachal Pradesh, N Punjab, Uttarakhand, and rest parts of West India. Scattered low/medium clouds with embedded isolated weak to moderate convection were seen over rest parts of East & South India.

Arabian Sea:

Broken low/medium clouds with embedded intense to very intense convection were seen over NE Arabian Sea. Scattered low/medium clouds with embedded weak to moderate convection were seen over SE Arabian Sea.

Bay of Bengal & Andaman Sea:

Broken low/medium clouds with embedded intense to very intense convection were seen over C Bay of Bengal. Scattered low/medium clouds with embedded moderate to intense convection were seen over N Bay of Bengal and Andaman Sea.

Past Weather:**Convection:-**

Intense to v intense convection over GUJ & KUTCH RAJ MP N CHTGH.

Moderate to Intense convection was observed over UTRKND, HARY DLH ORS S CHTGH BHR JHRKND ORS WB & SKM KKN MAHA NE STATES (.).

OLR:-

Upto 200 wm^{-2} was observed over J&K UTRKND RAJ MP CHTGH N CAP NE STATES.

Upto 230 wm^{-2} was observed over rest India except E UP W BHR TN.

Westerly Trough & Jet-Stream:-

Trough in Westerlies runs roughly along Longitude 71.0E North of Latitude 30.0N

& no Jet Stream is observed over India

Dynamic Features:-

Medium to High wind shear is observed over North & South India and Low wind shear is observed over Central India.

Negative shear tendency over NE STATES and Positive shear tendency is observed over GUJ.

Precipitation:

IMR:

Rainfall upto 150 mm was observed over E MP. Rainfall upto 110 mm was observed over W GUJ & KUTCH some parts of E MP S UP. Rainfall upto 70 mm was observed over some parts of GUJ RAJ UTRKND CHTGH ORS NE STATES SHWB W UP VID N CAP. Rainfall upto 50 mm was observed over HARY some parts of RAJ N KKN GUJ.

Rainfall up to **20** mm was observed over J&K HP rest parts of W UP HARY N PJB JHRKND GWB TLNGN CAP MRTHWD M MAHA(.).

HEM:

Rainfall from **208** mm was observed over some parts of GUJ & KUTCH E MP N CHTGH.

Rainfall from **139** mm was observed over some parts of J & K UTRKND RAJ GUJ E MP COT KRNTK N KKN RAJ VID S CHTGH S UP NE STATES.

Rainfall upto **14** mm was observed over rest INDIA except E UP W BHR TN.

RADAR and RAPID Observation:

DWR composite of DWR Delhi, Jaipur and Lucknow at 1612 hrs IST indicated multiple convection (dBZ upto 45-50) over Uttar Pradesh adjoining North Madhya Pradesh, Haryana, Punjab and Rajasthan. DWR composite of Hyderabad and Machilipatnam at 1621hrs IST also indicated multiple convection over Telangana & N Coastal Andhra Pradesh.

RAPID RGB Satellite imagery at 1530hrs IST indicated significant convective clouds over Uttar Pradesh, Haryana adjoining Punjab, Rajasthan, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Chhattisgarh, Vidarbha, Bihar, Jharkhand, West Bengal, Odisha, C & E Assam, E Meghalaya, E Arunachal Pradesh, Manipur, Tripura, Gujarat, Andhra Pradesh, Telangana, S Konkan & Goa and Coastal Karnataka.

Environmental condition (dust etc) and its forecast based on 00UTC of date:

Higher Dust concentration was observed over north Africa and Arabian country. Dust concentration is expected to remain low over north India for next five days. PM10 concentration is also expected to remain low over entire India.

2. NWP MODEL GUIDANCE:

NCMRWF (NCUM Forecasts based on 00 UTC of the day):-

1. Weather Systems:

12 UTC Charts of Day 2-4 show heat low confined to Pakistan and adjoining Rajasthan with MSLP values lower than 990hPa

00 UTC Charts of Day 1 -2 show a trough at mean sea level from Gujarat to Odisha across Uttar Pradesh, MP, Jharkhand. **In Day 3 -5** the trough is seen from Rajasthan to WB across UP, MP, Bihar/Jharkhand. An embedded CYCIR in **Day 5** is seen over UP and adjoining Bihar.

Another NW –SE trough at Gujarat and adjoining MP and Maharashtra in Day 1-2

Some isolated regions of wind discontinuity can be seen as embedded features in monsoon trough on all days.

00 UTC Charts of Day 1 A CYCIR over Bihar/Jharkhand at 850 hPa is seen moving westward over UP in day 2.

00 UTC Charts of Day 1-2 A CYCIR over Gujarat at 850 and 500 hPa

00 UTC Charts of Day 1-4 Offshore trough off east coast from WB to Tamilnadu

12 UTC Charts of Day 0-1 Western Disturbance as a trough is seen over Pakistan adjoining Punjab moving eastward in Day 1. In day 2-4 western disturbance is seen over J & K..

2. Location of jet and jet core at 500hPa:-500hPa Jet core (>60kt):

Weaker core winds at 12 UTC on all days over India.

3. Convergence at 850 hPa:

(Day/Index : Subdivisions with Lower Level Convergence > 15 x 10⁻⁵ /s)

Day0: Assam Meghalaya

Day1: Nil

Day2: Nil

Day3: Nil

Day4: Nil

4. Low level Vorticity:-Positive Vorticity (>15 x 10⁻⁵/s):

(Day/Index: Subdivisions with Lower Level Vortex > 15 x 10⁻⁵ /s):

Day0: Arunachal Pradesh, Assam Meghalaya, Odisha, Guj Reg, Coastal AP, TN Puducherry, Kerala,

Day1: Arunachal Pradesh, Assam Meghalaya, East RJ, Guj Reg, Saurashtra Kutch, TN Puducherry, Kerala,

Day2: Jharkhand, Bihar, East UP, East RJ, TN Puducherry, Kerala,

Day3: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, Himachal Pradesh, TN Puducherry, Kerala,

Day4: East UP, Himachal Pradesh, TN Puducherry, Kerala.

5. Showalter Index: -3 to -4[Very unstable]: (Day/Index: Subdivisions with Showalter Index < -4):

Day0: Arunachal Pradesh, Sub Himalayan WB, Jharkhand, Bihar, East UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, West MP, East MP,

Day1: Arunachal Pradesh, Sub Himalayan WB, Bihar, East UP, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ,

Day2: Arunachal Pradesh, Sub Himalayan WB, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ,

Day3: Arunachal Pradesh, Sub Himalayan WB, Gangetic WB, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, East MP, Coastal AP,

Day4: Arunachal Pradesh, NE NMMT, Sub Himalayan WB, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ.

6. K-Index :> 35[Very Unstable thunderstorm likely]: (Day/Index: Subdivisions with K Index > 40):

Day0: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, West MP, East MP, Saurashtra Kutch, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Rayalseema, TN Puducherry,

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Saurashtra Kutch, Marathwada, Vidarbha, Chhattisgarh, Telangana, NI Karnataka,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, Saurashtra Kutch, Vidarbha, Coastal AP,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Marathwada, Vidarbha, Chhattisgarh, Coastal AP, TN Puducherry,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Marathwada, Vidarbha, Chhattisgarh, Telangana, TN Puducherry.

7. Spatial distribution of TTI (TTI >50 [Scattered Thunderstorms few severe): (Day/Index: Subdivision with Total Totals Index > 52):

Day0: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day1: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day2: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Himachal Pradesh, Jammu Kashmir,

Day3: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ,

Day4: Arunachal Pradesh, Sub Himalayan WB, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ

8. Rainfall and thunder storm activity: (Day/Index: Subdivisions with Precipitation > 2 cm):

Day1: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, East MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Andaman Nicobar, Coastal AP, Rayalseema, TN Puducherry, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day2: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, West RJ, Odisha, East MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal AP, Telangana, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day3: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, West RJ, East RJ, Odisha, West MP, East MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Andaman Nicobar, Coastal Karnataka, NI Karnataka, SI Karnataka, Kerala,

Day4: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Punjab, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, West MP, East MP, Guj Reg, Saurashtra Kutch, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Coastal Karnataka, SI Karnataka, Kerala,

Day5: Arunachal Pradesh, Assam Meghalaya, NE NMMT, Sub Himalayan WB, Gangetic WB, Jharkhand, Bihar, East UP, West UP, Uttarakhand, Hry Chd Delhi, Himachal Pradesh, Jammu Kashmir, East RJ, Odisha, East MP, Guj Reg, Konkan Goa, Madhya Maharashtra, Chhattisgarh, Andaman Nicobar, Coastal AP, Coastal Karnataka, NI Karnataka, SI Karnataka,

***** Rainfall > 16cm/day over some parts of Gujarat in Day 1-2**

IMD GFS (T1534) based on 00UTC the day:-

1. Weather Systems:

The model analysis shows a trough from Punjab to GWB running parallel to foothills of Himalayas these features persist till day 5 and an associated a feeble low over Orissa coast persist next 3 to 4 days. A prominent off-shore trough is seen along west coast from Konkan and Goa up to Kerala persists up to day 5

2. Location of jet and jet core at 500 hPa:-500 hPa Jet core (>60kt):

No presence of jet core over the Indian region except Northern part of J & K on day 4 and day 5.

3. Low level Vorticity:-Positive Vorticity 850hPa (>12 x 10⁻¹/s):

Mostly along foothills of Himalayas and along west coast from Konkan and Goa up to Kerala and mainly prominent during morning hours for next 5 days..

4. Spatial distribution of T-Storm Initiation Index, Lifted Index, Total Total Index, CAPE, CINE and Sweat Index (High potential for thunderstorm):

T-Storm Initiation Index (> 4): Not exceeded threshold over the country.

Lifted Index (< -2): Less than threshold value in different pockets over most parts of the Delhi, UP, Bihar, GWP and adjoin areas for next 3 to 4 days. Over some parts of Gujarat and south Rajasthan next 2 to 3 days.

Total-Total Index (> 50): Above threshold value is not found over the country except over J & K region for next 3 to 4 days.

Sweat Index (> 300): Higher than threshold value over the areas similar to Lifted Index except it covers most parts of the peninsular India and J & K, H.P region.

CAPE (> 1000): Mostly western India over Rajasthan and Gujarat and over SHWB, GWP, Bihar, isolated pockets of coastal Orissa and Andhra Pradesh. It also appears over Northwest India along the monsoon trough over UP, Punjab, Haryana and adjoining areas.

CIN (>150): Consistently over Gujarat and adjoining Rajasthan and over some parts of Central India, extreme south parts of peninsular India during morning hours

5. Rainfall and thunderstorm activity:

40-70 mm rainfall and more over many parts of west coast and over a few pockets of NE states and along foothills of Himalayas till day 5.

20-40 mm rainfall Over parts of Orissa and adjoining GWP, south Jharkhand, Chhattisgarh and MP for next 4 to 5 days. Over Punjab, east UP and adjoining Delhi Haryana and Rajasthan from day 1 to day 5.

IMD WRF (based on 00UTC of the day):

1. Model Reflectivity (Max.dBz):

15-40 dBz model reflectivities over West coast of India mainly over northern ends today and next three days, over eastern coast of country along with GWP and adjoin areas for morning hours of today. Over parts of Punjab, Delhi and adjoin areas on today and tomorrow

2. Spatial distribution of Total Total Index, K-Index, CAPE and CIN [High potential for thunderstorm]

Total-Total Index (> 50) : Above threshold value mainly over parts northwest India and extending south-eastward over UP and over MP in central India during evening hours during next 2 days. Over eastern parts of peninsular India next 1 to 3 days.

CAPE (> 1000): Mostly over eastern parts of India, NE states and over North-west India mainly over western part of Rajasthan and Gujarat during next 2 days. Over eastern cost of country shows very high value on day 1 and day 3.

CIN (50-150): Analysis shows threshold value of CIN over Rajasthan, Haryana, Delhi and adjoining place India during morning hours..

3. Rainfall and thunderstorm activity:

40-70 mm and more along west coast of India and Gujarat, UK and west UP, NE states for the next three days.

20-40 mm along foothills of the Himalayas, GWP, Jharkhand and Chhattisgarh for next two days. Over most parts of Punjab, Delhi and adjoining areas for next three days

3. IOP ADVISORY FOR 24 and 48Hrs:

Summary and Conclusions:

Day-1 & Day-2:

In association with the off-shore trough at mean sea level from south Gujarat coast to Kerala coast, rainfall is likely to persist along the west coast of India. The low pressure area over Kutch & neighbourhood and the upper air cyclonic circulation over northeast Rajasthan & neighbourhood will result in the main rainfall zone to be concentrated over North Konkan coast and Gujarat region on day 1 and 2.

The moisture feeding into North India from the Arabian Sea on account of the above systems and from the Bay of Bengal through low level easterlies on account of the upper air cyclonic circulation over Jharkhand & adjoining Gangetic West Bengal is likely to cause heavy rainfall over most of the Indian region, excluding east peninsular India.

24 hour Advisory for IOP:	48 hour Advisory for IOP:
<p>Rainfall:</p> <p>Kerala, Coastal Karnataka, Konkan and Goa, Gujarat, Saurashtra and Kutch Madhya Maharashtra, East Madhya Pradesh, Chhattisgarh, Odisha, Bihar, Jharkhand, Sub Himalayan West Bengal, West and East Uttar Pradesh, Punjab, Haryana, East and West Rajasthan Uttarakhand, Himachal Pradesh, Jammu and Kashmir Assam Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh</p> <p>Thunderstorm with associated phenomena: NIL</p>	<p>Rainfall:</p> <p>Kerala, Coastal Karnataka, Konkan and Goa, Gujarat, Saurashtra and Kutch Madhya Maharashtra, East Madhya Pradesh, Chhattisgarh, Odisha, Bihar, Jharkhand, Sub Himalayan West Bengal, West and East Uttar Pradesh, Punjab, Haryana, East and West Rajasthan Uttarakhand, Himachal Pradesh, Jammu and Kashmir Assam Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh</p> <p>Thunderstorm with associated phenomena: NIL</p>

For NCMRWF NWP products:(<http://www.ncmrwf.gov.in/HomePage/NEPS-prod-1.php>)

For IMD NWP products:(http://nwp.imd.gov.in/diagpro_new.php)

For Synoptic plotted data and charts

<http://amssdelhi.gov.in/>

<http://www.amsskolkata.gov.in/>

For RAPID tool:

<http://rapid.imd.gov.in/>

Low Level Winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/LLW/MAR_2017/?C=M;O=D

Upper level winds

http://satellite.imd.gov.in/archive/INSAT-3D-IMAGER/3D-PRODUCTS/AMV/HLW/MAR_2017/?C=M;O=D

Past24hourHEMandIMRrainfall(upto03UTCoftoday)

IMR: http://satellite.imd.gov.in/img/3Ddaily_imr.jpg

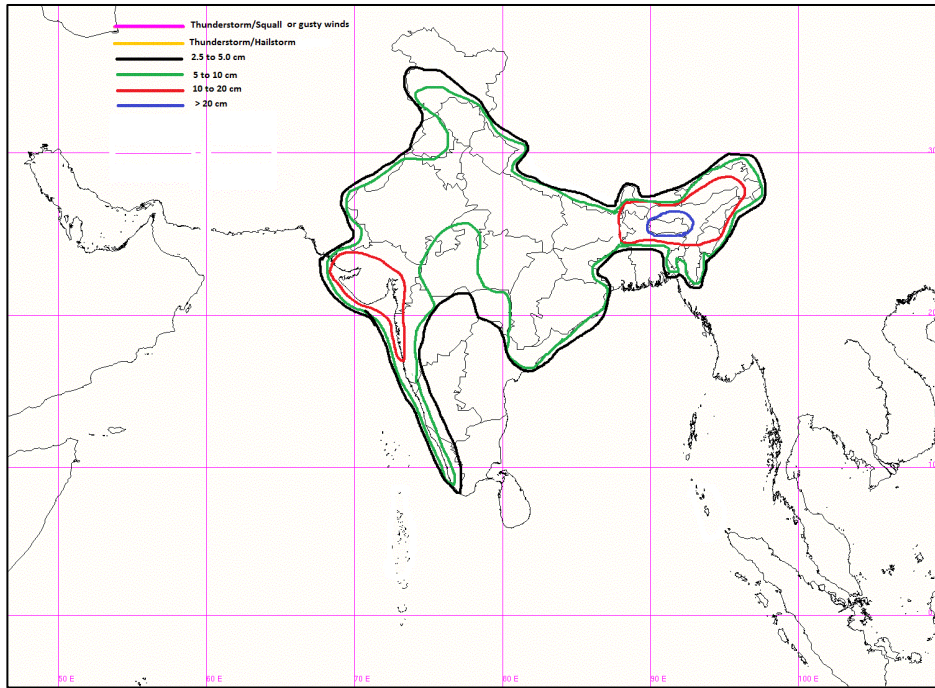
HEM: http://satellite.imd.gov.in/img/3Ddaily_he.jpg

ForRadarimagesofthepast24hoursincludingmosaicofimages:

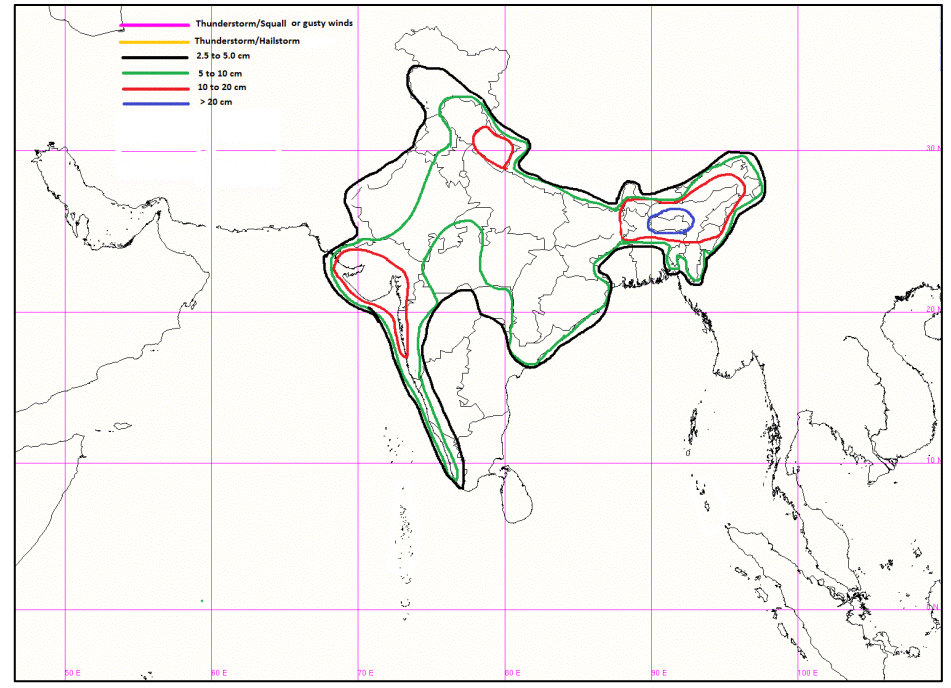
http://ddgmui.imd.gov.in/dwr_img/

Satellite sounder based T- Phigram

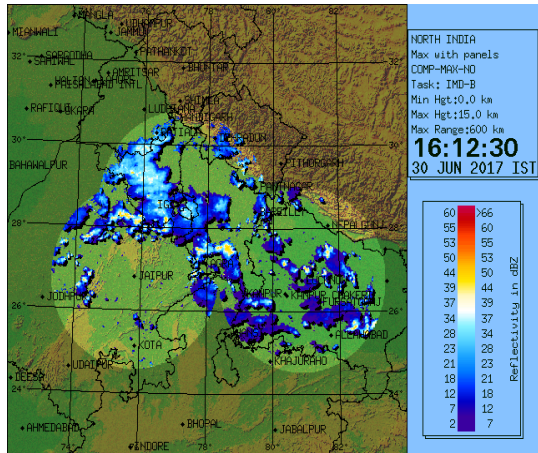
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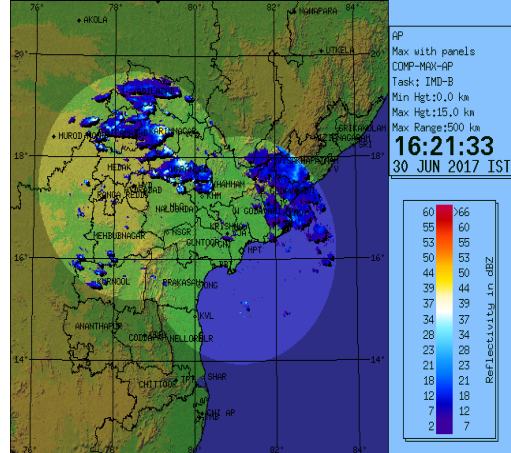
IOP Advisory for 24 hours



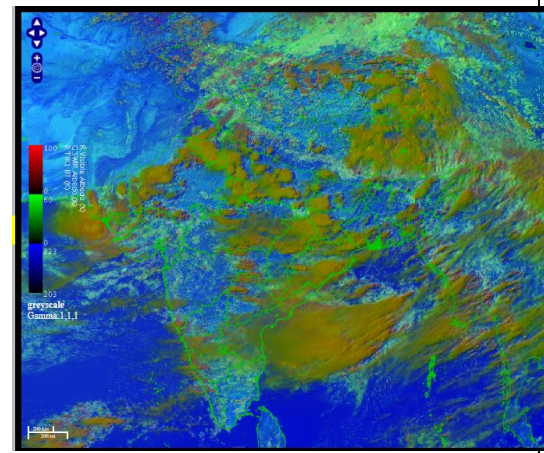
IOP Advisory for 48 hours



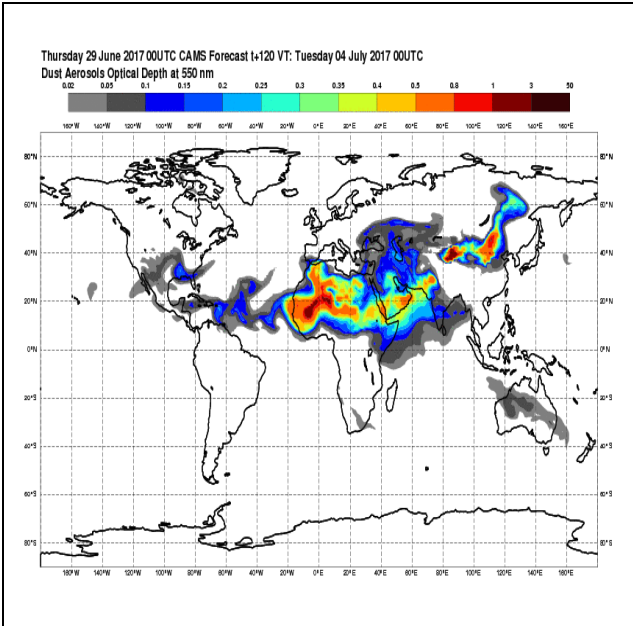
DWR composite of DWR Delhi, Jaipur and Lucknow at 1612hrs IST



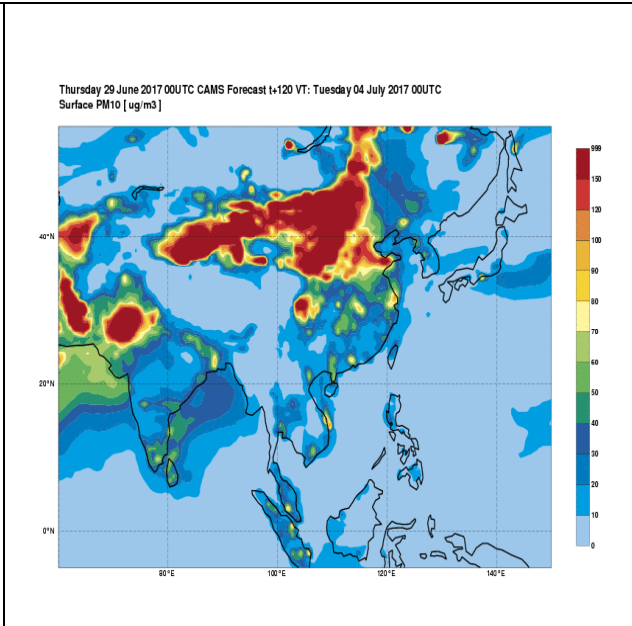
DWR Hyderabad and Machilipatnam composite at 1621 hrs IST



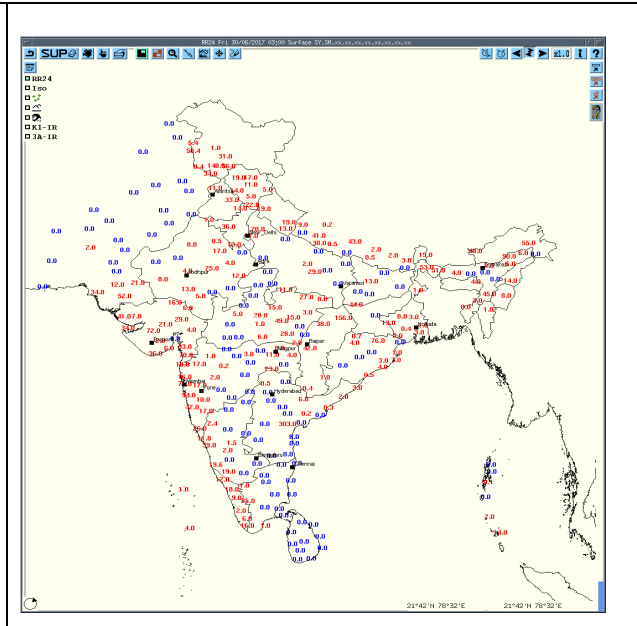
RAPID RGB Satellite Imagery at 1530 hrs IST of today



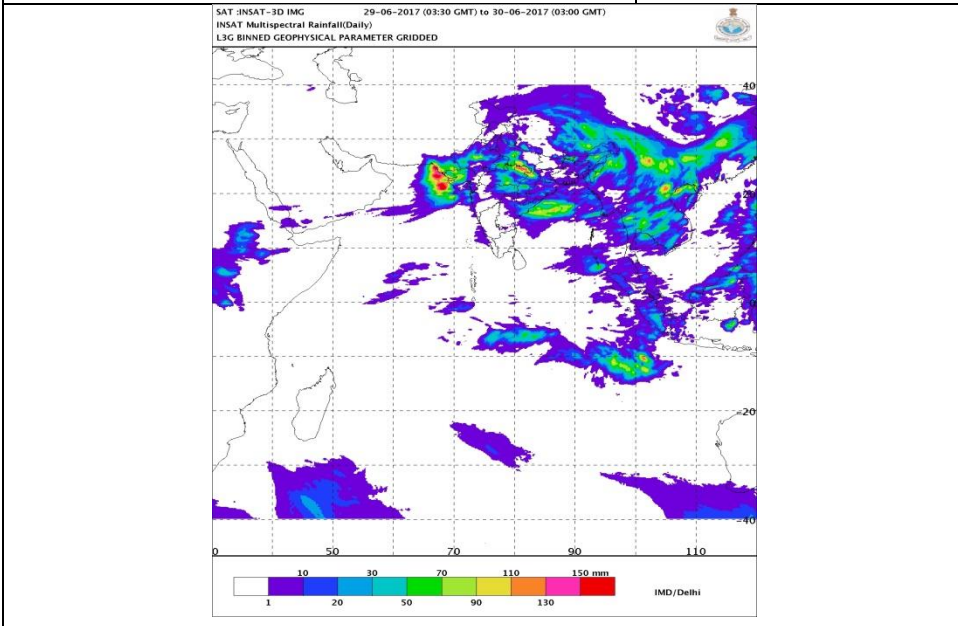
Forecast Dust Concentration for 4th July



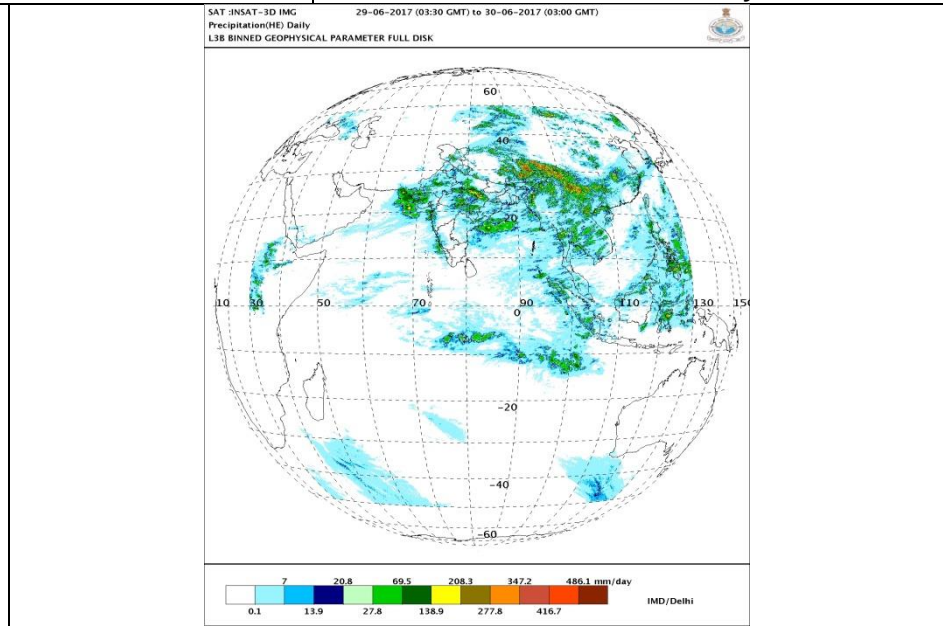
PM10 Forecast for 4th July



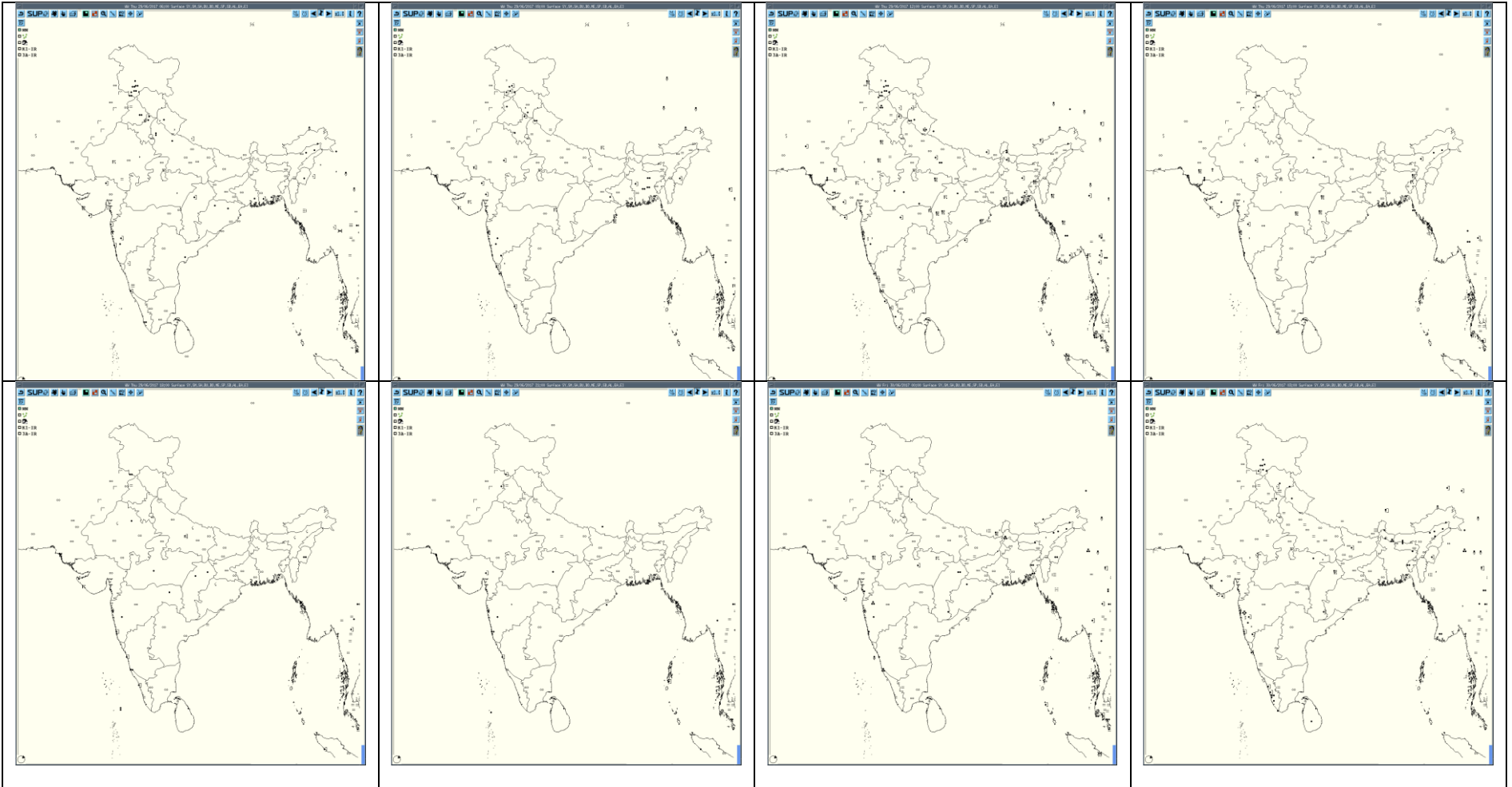
Accumulated 24 Hour rainfall (in red) recorded at 0300UTC of today



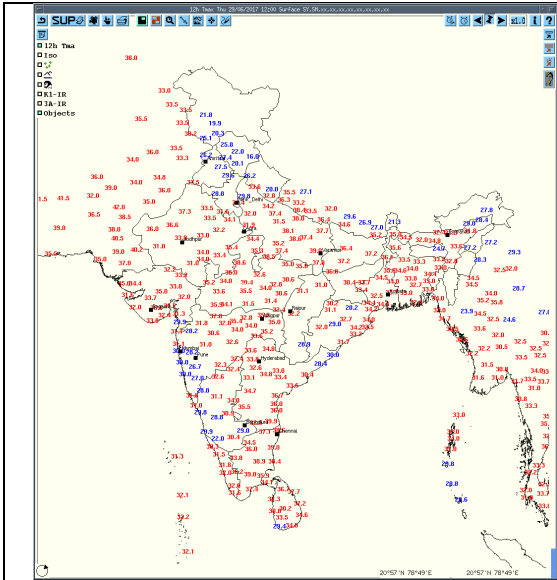
IMR Rainfall



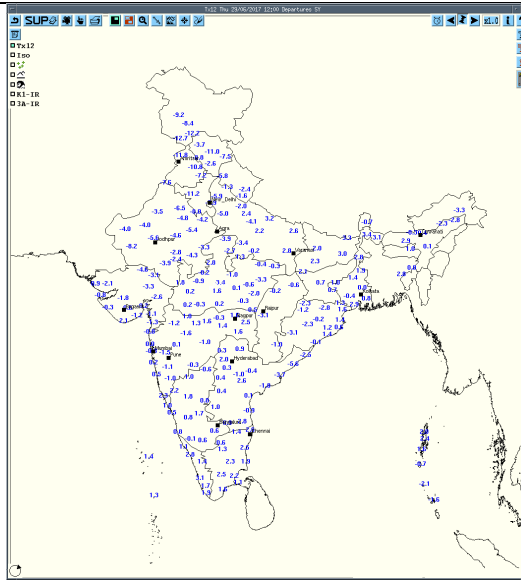
HEM Rainfall



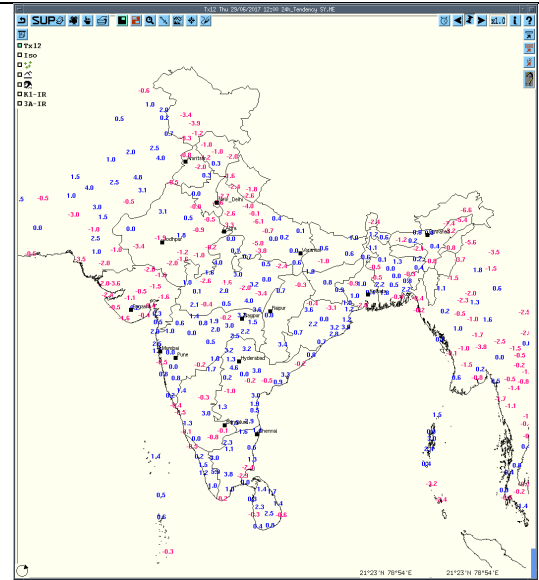
3hourly Past weather at 06, 09, 12, 15, 18, 21UTC of yesterday and 00 & 03 hrs UTC of today



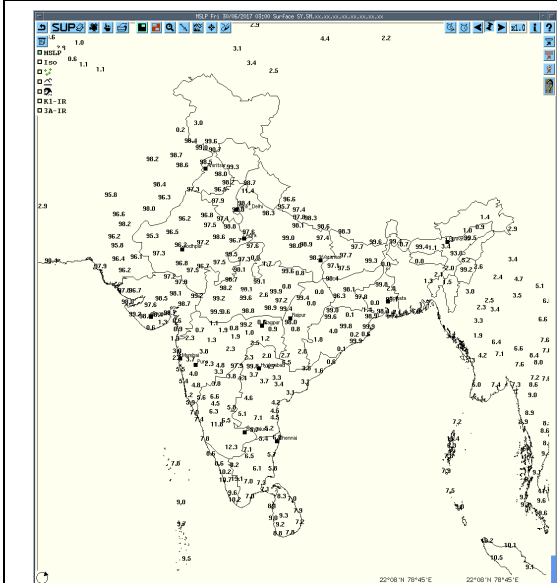
Tmax



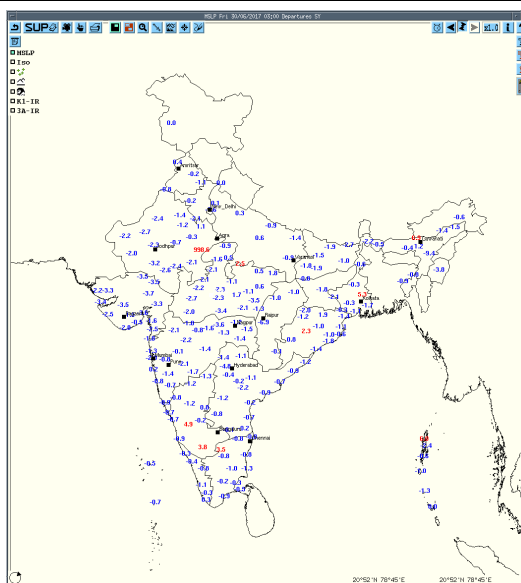
Departure Tmax



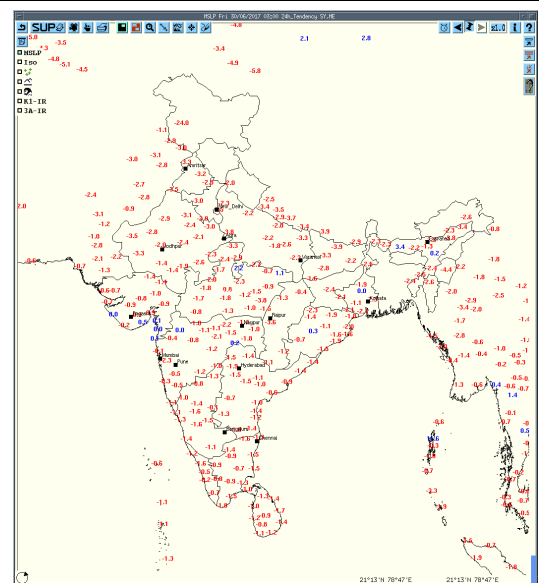
Tendency Tmax



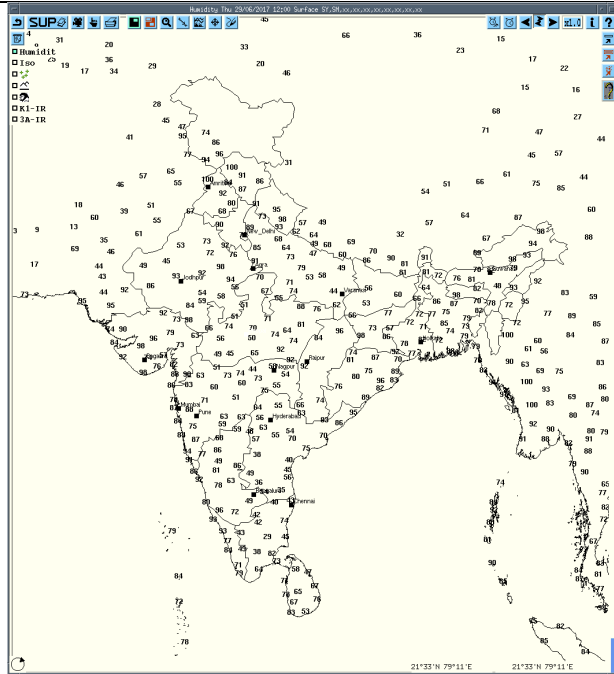
MSLP



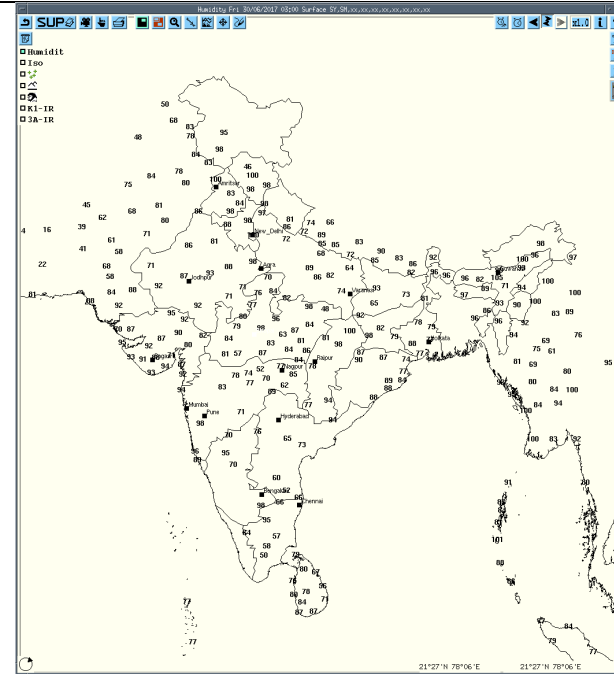
Departure MSLP



Tendency MSLP



RH at 12UTC yesterday



RH at 03UTC today

Realised past 24hrs TS/SQ/HS Data (reported at 0300UTC of the day):

Realized weather past 24hours (Based on SYNERGIE Products)					
Date	Time of Reporting	Name of Station Reporting	Region	STATE	Weather Event
29-06-17	0600UTC	Jodhpur	NW India	Rajasthan	Thunderstorm
		Porbandar	W India	Gujarat	Thunderstorm
29-06-17	0900UTC	Barmer	NW India	Rajasthan	Thunderstorm
		Gondia	C India	Maharashtra (Vidarbha)	Thunderstorm
		Rajkot, Porbandar	W India	Gujarat	Thunderstorm
		Chandbali, Paradeep	E India	Odisha	Thunderstorm
29-06-17	1200UTC	Churu, Ajmer	NW India	Rajasthan	Thunderstorm
		Satna	C India	Madhya Pradesh	Thunderstorm
		Pendra Road, Raipur (AP), Rajnandgaon	C India	Chhattisgarh	Thunderstorm
		Bhubaneshwar	E India	Odisha	Thunderstorm
		Deesa, Porbandar	W India	Gujarat	Thunderstorm
		Kolkata	E India	West Bengal (GWB)	Thunderstorm
		Kailasahar	NE India	Tripura	Thunderstorm
29-06-17	1500UTC	Bikaner	NW India	Rajasthan	Lightening
		Guna	C India	Madhya Pradesh	Thunderstorm
		Pendra Road, Raipur(PBO)	C India	Chhattisgarh	Thunderstorm
		Nagpur	C India	Maharashtra (Vidarbha)	Thunderstorm
29-06-17	1800UTC	Bikaner	NW India	Rajasthan	Lightening
		Lucknow	NW India	Uttar Pradesh	Thunderstorm
		Porbandar	W India	Gujarat	Thunderstorm
		Jharsuguda	E India	Odisha	Lightening
29-06-17	2100UTC	Porbandar	W India	Gujarat	Thunderstorm
30-06-17	0000UTC	Udaipur	NW India	Rajasthan	Thunderstorm
		Satna	C India	Madhya Pradesh	Thunderstorm
		Porbandar	W India	Gujarat	Thunderstorm
30-06-17	0300UTC	Ambikapur	C India	Chhattisgarh	Thunderstorm
		Porbandar	W India	Gujarat	Thunderstorm

Realised TS/HS/SQ during past 24 hours ending at 0300UTC of today(received from RMCs/MCs)						
Name of Station Reporting	Region	STATE	Weather Event (TS/Hail/Squall)	Date	Time of Commencement (IST)	Time of end (IST)
Kandla	W India	Gujarat (Saurashtra & Kutch)	Thunderstorm	29-06-17	1300	1415
Deesa	W India	Gujarat (Gujarat Region)	Thunderstorm	29-06-17	1605	1620
Ahmedabad	W India	Gujarat (Gujarat Region)	Thunderstorm	29-06-17	1810	1910
Pantnagar	NW India	Uttarakhand	Thunderstorm	29-06-17	1345	1445
Mukteshwar	NW India	Uttarakhand	Thunderstorm	29-06-17	1550	1645
Hisar	NW India	Haryana	Thunderstorm	29-06-17	1250	1320
Ballia	NW India	Uttar Pradesh (East)	Thunderstorm	29-06-17	1430	2225
Kanpur IAF	NW India	Uttar Pradesh (East)	Thunderstorm	29-06-17	0830 1400	1030 1700
Kanpur City	NW India	Uttar Pradesh (East)	Thunderstorm	29-06-17	1400	1500
Lucknow (AP)	NW India	Uttar Pradesh (East)	Thunderstorm	29-06-17	1720	1750
Churk	NW India	Uttar Pradesh (East)	Thunderstorm	29-06-17	1430	2225
Pilani	NW India	Rajasthan (East)	Thunderstorm	29-06-17	1030	1315
Churu	NW India	Rajasthan (West)	Thunderstorm	29-06-17	1650	1740
Barmer	NW India	Rajasthan (West)	Thunderstorm	29-06-17	1330	1410
Jodhpur	NW India	Rajasthan (West)	Thunderstorm	29-06-17	1030 1530	1140 1815
Nagpur	C India	Maharashtra (Vidarbha)	Thunderstorm	29-06-17	1922	2140
Bramhapuri	C India	Maharashtra (Vidarbha)	Thunderstorm	29-06-17	1900	2000
Wardha	C India	Maharashtra (Vidarbha)	Thunderstorm		1830	1845
Gondia	C India	Maharashtra (Vidarbha)	Thunderstorm	29-06-17	1340 1915	1730 2030
Gwalior	C India	Madhya Pradesh (West)	Thunderstorm	29-06-17	2000	2045
Chindwada	C India	Madhya Pradesh (East)	Thunderstorm	29-06-17	1610	2330
Raipur	C India	Chhattisgarh	Thunderstorm	29-06-17	1620	2055
Ambikapur	C India	Chhattisgarh	Thunderstorm	29-06-17	1445 2120 0345	1620 2230 0500
				30-06-17	0700	0830
Pendra Rd	C India	Chhattisgarh	Thunderstorm	29-06-17	1700	2100
Guna	C India	Madhya Pradesh	Thunderstorm	29-06-17	2010	2100
Safdarjung	NW India	Delhi	Thunderstorm	30-06-17	0645	0810
Karipur AP	S India	Kerala	Thunderstorm	29-06-17	1635	1710
N/Lakhimpur	NE India	Assam	Thunderstorm	29-06-17	1200	1450
Barapani	NE India	Meghalaya	Thunderstorm	29-06-17	1305	1325
Lengpui	NE India	Mizoram	Thunderstorm	29-06-17	1700	1708
Kailasahar	NE India	Tripura	Thunderstorm	29-06-17	1755	xxxx
Dum Dum	E India	West Bengal (GWB)	Thunderstorm & Lightening	29-06-17	1625	1705
Diamond Harbour	E India	West Bengal (GWB)	Thunderstorm	30-06-1	0130	0156

Haldia	E India	West Bengal (GWB)	Thunderstorm	30-06-17	0125	0155
Asansol	E India	West Bengal (GWB)	Thunderstorm	29-06-17	1210	1240
Gaya	E India	Bihar	Lightening	29-06-17	2025	2120
Daltonganj	E India	Jharkhand	Thunderstorm	29-06-17	2210	2315
Bhubaneswar	E India	Odisha	Thunderstorm	29-06-17	1655	1820
Jharsuguda	E India	Odisha	Lightening	29/30-06-17	2130	0030
Chandbali	E India	Odisha	Thunderstorm	29-06-17	1400	1600
Paradeep	E India	Odisha	Thunderstorm	29-06-17	1425	1600
Keonjhar	E India	Odisha	Thunderstorm	29-06-17	0950	1020

Past 24 hours DWR Report:

Radar Station Name	Date of Report	Time Interval of Observation (UTC)	Organisation of cells (Isolated single cells/multiple cells/convective regions /squall lines) with height of 20 dBZ echo top and maximum reflectivity	Formation w.r.t. radar station and Direction of movement	Remarks	Associated Severe Weather if any	Districts affected
Machilipatnam	30-06-17	291501-300201	Convective region(Avg.ht of cells=5.1Km, and maximum reflectivity=55.0 dBZ)	NW (250Kmm) and moving SE ly direction with average speed of 40.0 kmph.	Cell started forming at 1501 UTC, at NW(250 km) from Radar the maximum reflectivity during 1541 UTC to 2311 UTC and died down at 0201UTC	Possibility of Thunder storm with rain and winds.	Suryapet, Mahabubabad, Khammam, Jangaon, Warangal-rural&urban, Jayasankar-Bhupalpalli, Bhadrachalam, Dantewada, Malkangiri, East & west Godavari, Visakhapatnam and Krishna Districts
Nagpur	30-06-17	0652-1332 0752-1442 0842-	Multiple Multiple Multiple	100-150 km in NE moving towards E 150 km in NE, moving in NE 100-150 KM IN WNW	46 dbZ cloud ht= 3.5-5.8km 46 dbZ, cloud ht.=2.5-5 km 45 dbZ, cloud ht= 3.5-5 km	<u>Thunderstorm warning</u> – 1132 UTC=110 km NE 1222UTC=80 km WWS 1332UTC=60 km	Rainfall occurred in many places in Ramtek, Seoni, Balaghat, Jabalpur,

		2342		to SSW, moving towards E		SW 2012UTC=180 km NE	Bhandara, Gadchiroli, Brahmapuri, and Yeotmal, Pusad, Adilabad,dur g, umred,Nagpu r,akola, amrawati,bet ul,chindwara, kato,,ramtek, gondia,hinga nghat.
		0002- 0302	NIL				
Patiala	30-06-17	290300 290600	Multiple cells cell Max dBZ=46.0 Ht.= 7-9 KMS	W,NW, & E,SE SECTOR; MOVENENT-N- WARD	-----	TS/RA	BARNAL,MO GA,PATIALA, LUDHIANA,J ALANDHAR, ADAMPUR,H OSIARPUR, PHAGWARA, DDN,RISIKE SH,HARIDW AR AND ITS ADJOINING ARES.
		290600- 290900	Multiple cells cell Max dBZ=45.5 Ht.= 8-10 KMS	N, SE, &S,N SECTOR; MOVENENT-N- WARD	-----	TS/RA	JIND, BARWALA, KURKSHET RA, YAMUNANA GER, BEHAT, SAHARENP UR, DDN, PALAMPUR AND ITS ADJOINING ARES.
		290900- 300252	No Significant Echo	--	--	--	--

Jaipur	30/06/17	290302-292112	Multiple cell with average height of 4.0 km & maximum reflectivity 48.0 dBZ	Multiple cell continueing from previous day from 0302 UTC of 29/06/2017 towards E,NW of Jaipur and moved to North Wards at speed 15-20 km/hr	Multiple cell continueing from previous day from 0302 UTC of 29/06/2017 towards E,NW of Jaipur and reaches maximum relectivity during 0742-1352 UTC OF 29/06/2017 and died down 2112 utc	Thunderstorm/rain at a Isolated places	Churu,pali,na gaur,bhilwara ,ajmer,bundi, kota,tonk,jaipur,dausa,swa imadhopur,jh alawar,baran, karauli,alawar,bharatpur,cittorgarh
Agartala	30-06-17	290302 - 290542	Multiple cells formed NNW OF DWR Agartala with Maximum Height cell height 9.2 km at 0302 UTC and maximum reflectivity 29.50 dBZ at 0302 UTC.	Formed about 130 km NNW of DWR Agartala and moves N wards with around 11 kmph	Cells dissipated at 0542 UTC 160 km of NNE	N/A	N/A
		290832 - 291202	Multiple Cells SSE of DWR Agartala with Maximum cell Height 9.2 km a t0832 UTC and maximum reflectivity 25 dBZ .	Formed about 48 km SSE of DWR Agartala at SSE and moves N wards with around 37.6 kmph	Cells dissipated at 1202UTC 80 km NNE at Bangladesh	N/A	N/A
		291212 - 2291632	Multiple cell formed with Maximum cell Height 10.4 km at 1212 UTC and maximum reflectivity 42 dBZ.	Formed 80 km NE of DWR Agartala. And moves North-East Wards at about 30Kmph.	Cells dissipated at 1622UTC 160 km NE .	N/A	N/A
		292152 - 300302	Multiple cell formed with Maximum cell Height 9.0 km at 2152 UTC and maximum reflectivity 36 dBZ.	Formed 40 km NNW of DWR Agartala. And moves North Wards at about 14Kmph.	Persist	Rain	N/A
Srinagar	30-06-17	28-JUNE 03Z to 29-JUNE03 Z(24hrs)	1. Single cells developed in SE & Multiple cells SE direction of DWR at 1030 UTC and grew into multiple cells in SE-direction with max. reflectivity of 45-50 dbz and average height 6km.	Dissipated at 0210 with SE direction.	Moderate Heavy rain. in Batote/Jammu/Katra/Kukernag / Bharderwah/PAHLAGAM/Qazigund/Banihal/	NIL	All districts

			2. Single cells developed in NW direction of DWR at 2040UTC and grew into multiple cells in SE direction with max. reflectivity of 45-50 dbz and average height 6 Km				
Lucknow	30-06-17	0300UTC To 0612UTC	Multiple Cells with average height of 12 km and maximum reflectivity of 46dBZ	W (50Km) moving in N'ly direction at speed of 60kmph.	---	TS/Rain	KNJ,HRD
		0712 UTC TO 1332 UTC	Isolated Cell with average height of 13 km and max. reflectivity of 48dBZ	South(50km) moving in NNW'ly direction at speed of 50kmph.	New cells formed at 0722UTC in KNP,LKN, UNO,HRD	TS/Rain	KNP,LKN, UNO,HRD
		0822UTC TO 1242UTC	Isolated Cells with average height of 12km and max. reflectivity of 46dbZ	W (30 km) moving in NNW'ly direction at speed of 30kmph	New cells formed in ALB,PTG, RBL,LKN, HRD during the period	TS/Rain	ALB,PTG, RBL,LKN, HRD
		1412UTC TO 1652UTC	Isolated Cells with average height of 12km and max. reflectivity of 48dbZ	N (50Km) moving in NNW'ly direction at speed of 30kmph	---	TS/Rain	HRD Sitapur
		1912UTC TO 2122UTC	Isolated Cells with average height of 10km and max. reflectivity of 45dbZ	N (50Km) moving in SW'ly direction at speed of 30kmph	---	TS/Rain	BRC
		2122UTC TO 2302UTC	Isolated Cells with average height of 11km and max. reflectivity of 46dbZ	N (50Km) moving in N'ly direction at speed of 30kmph	---	TS/Rain	Sitapur
Bhuj	30-06-17	290400-291230	multiple cells at Ht. of 1.5 Km to 18 Km with 50 dBz Max.Z	10 KM to 200 KM initially in WNW to S move anti clockwise full round	Observed during 04:30 UTC to 12:00 UTC	TS or TSRA	Rajkot Surendra nagar Jamnagar Porbandar Kuchh

Karaikal	30-06-17	290300-300300	--	--	DWR U/S	--	--
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+ thunderstorm



+ heavy thunderstorm



sandstorm or dust storm



squall



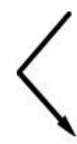
hail shower



tropical storm



+ tornado



+ lightning



+ hurricane



haze



smoke



dust or sand storm



fog



drizzle



rain



snow



showers



hail



thunderstorm

Weather Symbols